News release

23 March 2007

Polar meteorology - the global impact

The North and South Poles are expected to experience some of the greatest temperature increases on Earth due to climate change. Through international collaborations, the Met Office undertakes research activities related to the polar regions, with the aim of increasing our understanding the environment of these isolated locations.

March 23 is World Meteorological Day 2007, and to mark the importance of the climate at the poles and how it affects the rest of the planet, the World Meteorological Organization has dedicated the day to Polar Meteorology.

The Earth's climate system is linked through a series of complex atmospheric and ocean circulations.

The Thermohaline circulation (THC) is a system of currents, including the Gulf Stream, extending across the major oceans of the planet conveying heat and energy around the world's oceans and influencing the atmosphere.

The oceans around the poles are crucial to the THC. Melting snow and glaciers adds fresh water to the sea – changing its salinity. This could have the effect of slowing down or diverting the THC, with knock-on effects to regional climates.

One area of polar research that the Met Office focuses on is changes in sea ice and sea temperature, both of which have an impact on the Atlantic Ocean current, although it is considered highly unlikely that the Gulf Stream will shut down completely.

Climate scientist at the Met Office Peili Wu said: "The global impacts of changing climate at the poles could have consequences that echo right around the world. By the end of this century, temperatures in the Arctic could rise by 4 °C, with potentially major disruption to the climate system".

Met Office expertise also feeds into a current international project called the Greenland Flow Distortion experiment (GFDex), which is looking at how weather patterns are influenced by the geography of the region. In particular, the experiment will investigate how polar weather patterns are influenced by Greenland, and the effects this has on the weather in the UK.

Keir Bovis a scientist from the GFDex Met Office team said: "The impact of polar regions on the predictability of medium-range forecasts is an exciting and important area of research. Extra weather observations gathered in these regions are being used by researchers to help improve forecasts in the UK".

World Meteorological Day also marks the launch of a European collaboration between members of EUMETNET, providing severe weather warnings across the continent. See the Meteoalarm page for further details.

Notes to Editors:

- World Meteorological Day (23 March) is co-ordinated by the World Meteorological Organization.
- GDFex is an International Polar Year approved project, and the Met Office is a project partner working with other scientists from the UK, Canada, Norway, Iceland and the USA.
- EUMETNET provides a framework to organise co-operative programmes between the Members in the various fields of basic meteorological activities such as observing systems, data processing, basic forecasting products, research and development, training. Through EUMETNET Programmes, the Members intend to develop their collective capability to serve environment management and climate monitoring and to bring to all European users the best available quality of meteorological information. They will use EUMETNET to make more efficient the management of their collective resources.
- Further details on Meteoalarm and an information leaflet are available from persvoorlichting@knmi.nl or telephone Monique Somers and Harry Geurts +31 30 2206 317 and +31 6 53 214 364.

For further information:
Met Office Press Office +44 (0)1392 886655
E-mail: pressoffice@metoffice.gov.uk

Met Office Customer Centre 0870 900 0100
If you're outside the UK +44 (0)1392 885680

©Crown copyright www.metoffice.gov.uk